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[COMMITTEE PRINT NO. 12]

ACCOMPLISHMENTS OF IRRIGATION NORTH PLATTE PROJECT WYOMING-NEBRASKA

UNIVERSITY OF MICHIGAN
JUL 13 1956
MAIN READING ROOM

REPORT

BY

BUREAU OF RECLAMATION
UNITED STATES DEPARTMENT OF THE INTERIOR

FOR THE USE OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
HOUSE OF REPRESENTATIVES

APRIL 1956

Printed for the use of the Committee on Interior and Insular Affairs

UNITED STATES
GOVERNMENT PRINTING OFFICE
75663 WASHINGTON : 1956

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STATEMENT OF THE CHAIRMAN

APRIL 1956.

To Members of the House Interior and Insular Affairs Committee:

On many occasions I have pointed out that, in my opinion, the relatively small Federal expenditures in our Reclamation program constitute the Nation's wisest investment. Not only are the moneys returned to the Federal Treasury but new areas are developed and new wealth is created which strengthen materially the economy of the project area and the Nation.

Much information has been made available on the tangible effects of Reclamation developments; however, very little has been said or published on the intangible effects—such as the impact of these developments on the local and national economy. In order to obtain more specific information along these lines, I requested the Commissioner of Reclamation to select a few representative projects and furnish the committee information indicating the contributions which these projects are making to the maintenance of our present high economic level. Several of these studies have been completed and I believe the information set out therein will be of interest to each of you and to the general public.

The study included in this particular document relates to the North Platte project in Nebraska and Wyoming, one of the first Reclamation projects authorized under the Reclamation Act of 1902. This project has been in existence for nearly 50 years and therefore lends itself well to analysis at this time.

One interesting fact brought out in the study is that each year the net Federal tax revenues directly attributable to the North Platte Reclamation project amount to about $16 million, or almost three-quarters of the total construction cost. Another interesting finding relates to the contrast of productivity between the irrigated area and the surrounding arid, dry-farmed area; the irrigated land outproduces the dry-farmed land by 13 times.

Up to this time, the project has produced crops worth 20 times the cost of building the project. In the 1930's, when drought and depression prevailed, this irrigated area was able to absorb population shifting from distressed areas.

The above and similar information given in the study indicates the important contribution that the North Platte project has made toward the development of this large area of Nebraska and Wyoming. This project has paid for itself many times in benefits to the local area and to the Nation. In addition, of course, to these intangible benefits, the total project cost is being returned on schedule by the water users, with almost 75 percent already repaid.

I believe that you will find this a very interesting and illuminating study.

CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs.

STATEMENT OF THE RANKING MINORITY MEMBER

Hon. A. L. Miller, Nebraska

The benefits of irrigation are very dramatically demonstrated in the following report by the Bureau of Reclamation, entitled "Accomplishments of Irrigation, North Platte Project, Wyoming-Nebraska." A large part of the area described in this report is in my congressional district, and I can personally attest to the prosperity, the stability, and the security of the farms, the towns, the cities, and the industries served by this, one of the oldest Federal irrigation projects in the United States.

Most of the millions of words that have been spoken and written about irrigation have developed well the direct and indirect financial benefits, the real and the abstract advantages that flow with the water brought onto the project lands. As a medical doctor, I have observed the many and highly desirable changes in all phases of living, the betterment of not only the financial but also the physical well-being of the American people, that follows only because of irrigation. Many crops that improve American diet are grown almost exclusively under irrigation. These are notable:

Nearly 91 percent of the total lettuce crop is produced in the irrigated West;

All of the early and midspring asparagus crop is produced under irrigation and 96 percent of the winter broccoli also comes from this area.

Carrots, rich in vitamin A, would not be plentiful and available the year around without irrigation in Southwestern United States.

Eighty-eight percent of the pears, 58 percent of the peaches, 95 percent of the grapes, and all of our almonds, apricots, lemons, dates, figs, hops, mustard seed, filberts, walnuts, olives, prunes, and honeydew and honeyball melons are produced in the West.

Many of these foods are essential in providing a wholesome, well-balanced and nutritious diet, and they are available to the people of this country during all months of the year thanks to the irrigation projects of Western United States.

The crops produced principally in the North Platte project area are sugar beets, potatoes, alfalfa, and corn, with a number of irrigated pastures providing an abundant supply of feed for livestock. The sugar beets, potatoes, and the beans are processed in plants located in the towns along this valley; the alfalfa and corn are, for the most part, fed to livestock handled by local operators, contributing in no way to Government surplus stockpiles. This diversified and balanced productivity helps to stabilize the economy of this area.

The following report tells an interesting story, a story of pioneering that opened the way and laid the groundwork for the many great reclamation developments that were to follow. It is a tribute to the vision of these pioneers, and I would heartily commend it to your attention and study.

LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, D. C., December 19, 1955.

Hon. CLAIR ENGLE,
Chairman, Interior and Insular Affairs Committee,
House of Representatives, Washington, D. C.

My Dear Mr. ENGLE: At your request for a series of evaluation studies of irrigation in the West, we have completed a study of the accomplishments of irrigation on the North Platte project in Wyoming and Nebraska. This was one of the first projects undertaken by the United States Reclamation Service early in the century. The North Platte project lends itself well to analysis at this time, having been in existence for nearly 50 years and being so situated as to permit the evaluation of its effects with a good degree of accuracy.

We sought to bring together in a brief report the many indicators of growth, economic development, and prosperity obtained from published data and private sources. This report, insofar as possible, describes the quantitative accomplishments of irrigation in the area. To the average citizen, the fullest appreciation of the beneficial effects of irrigation can only be gained by actually visiting and seeing its results in an arid area.

This study contrasts the irrigated area and the surrounding arid dry-farmed area, not only in productivity of the basic agricultural resource, but also in another equally important aspect—the extent to which the off-farm economy is stimulated. Irrigation has provided many more opportunities and a higher living standard for both farm and nonfarm people than would be found under dryland farming alone.

Irrigated land outproduces adjacent arid lands by 13 times. The irrigated area and towns therein support 27 times the population and provide 40 times the income than an equivalent dryland area. These effects are well known among westerners who have witnessed the transformation of arid land through irrigation.

Up to this time, the project has produced crops worth 20 times the cost of building the project. By creating abundant and stable production in a normally hazardous agricultural area, this irrigation project annually induces some $91 million of income payments among the people of the valley. Between 1930 and 1940 when drought and depression prevailed, this irrigated area was able to absorb population shifting from distressed areas in search of livelihoods and opportunities.

All reimbursable project costs will be repaid by the water users. All irrigation facilities except reserve works have been operated by the irrigation districts since 1927. Repayments are on schedule and well over half the repayment contract obligation has been returned to the Federal Treasury.

These facts and others which may be found in the enclosed report emphasize the success of this irrigation project. The accomplishments of irrigation here provide valuable indicators of what may be expected from similar future irrigation developments.

Sincerely yours,

S. W. CROSTHWAIT,
Acting Commissioner.

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF RECLAMATION

REGION 7

ACCOMPLISHMENTS OF IRRIGATION
NORTH PLATTE PROJECT
WYOMING-NEBRASKA

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FOREWORD

"The * * * (West) is marked by the sharpest contrasts. Here stand the Nation's highest mountains and lowest depressions; areas of the highest rainfall and runoff, and desert areas; great urban areas and uninhabited rugged or desert lands; torrential rains and long droughts. Here are the irrigated lands and half the potential water power of the Nation.

"In * * * (the West), water is the resource which most seriously affects all forms of economic growth.

"Through * * * realistic approach our heritage of useful resources can be safeguarded against deterioration from misuse and neglect, providing a broader base for an expanding economy, and creating opportunities for application of initiative and enterprise by our people."—Report of the President's Water Resources Policy Commission, 1950.

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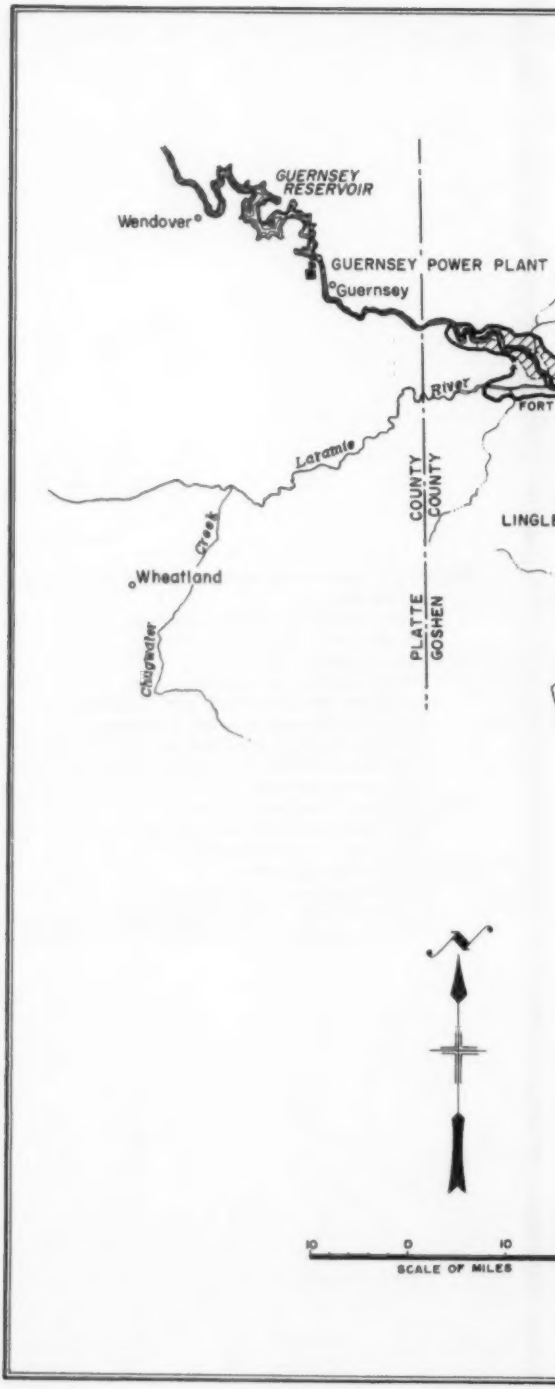
GUERNSEY RESERVOIR
Wendover
GUERNSEY POWER PLANT
Guernsey
River
FORT
Laramie
COUNTY
COUNTY
LINGLE
Creek
Wheatland
PLATTE
GOSHEN
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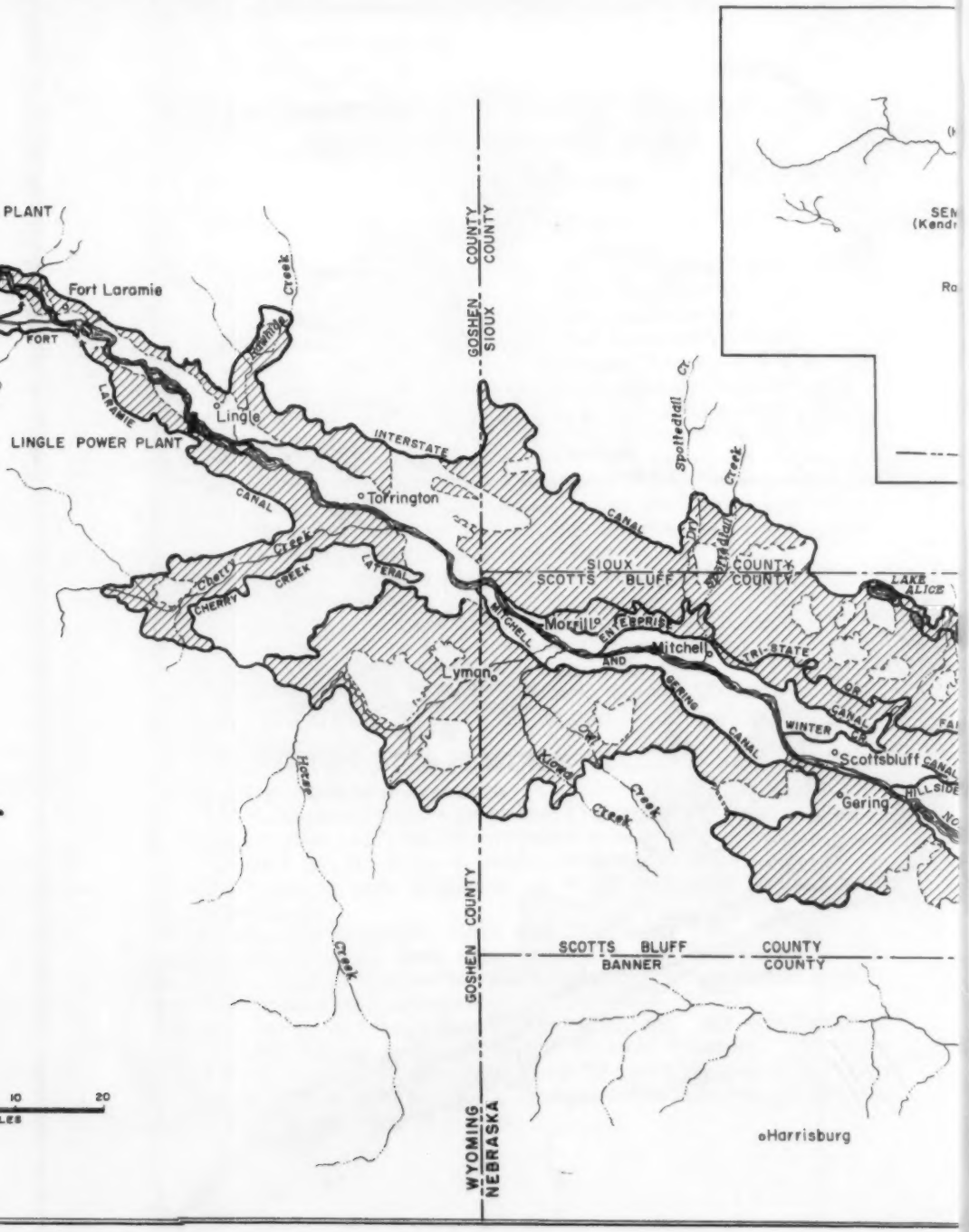
SCALE OF MILES


PLANT
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INTERSTATE
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Torrington
Cherry Creek
LATERAL
CHERRY
CREEK
GOSHEN COUNTY
SIOUX COUNTY
Spottedtail Cr.
Spottedtail Creek
SIOUX COUNTY
SCOTTS BLUFF COUNTY
LAKE ALICE
BINGHELL
Morrill
ENTERPRISE
Mitchell
TRI-STATE
AND
GERING
CANAL
WINTER
Lyman
Horse Creek
Scottsbluff
Gering
HILLSIDE
SCOTTS BLUFF COUNTY
BANNER COUNTY
GOSHEN COUNTY
Harrisburg
WYOMING
NEBRASKA
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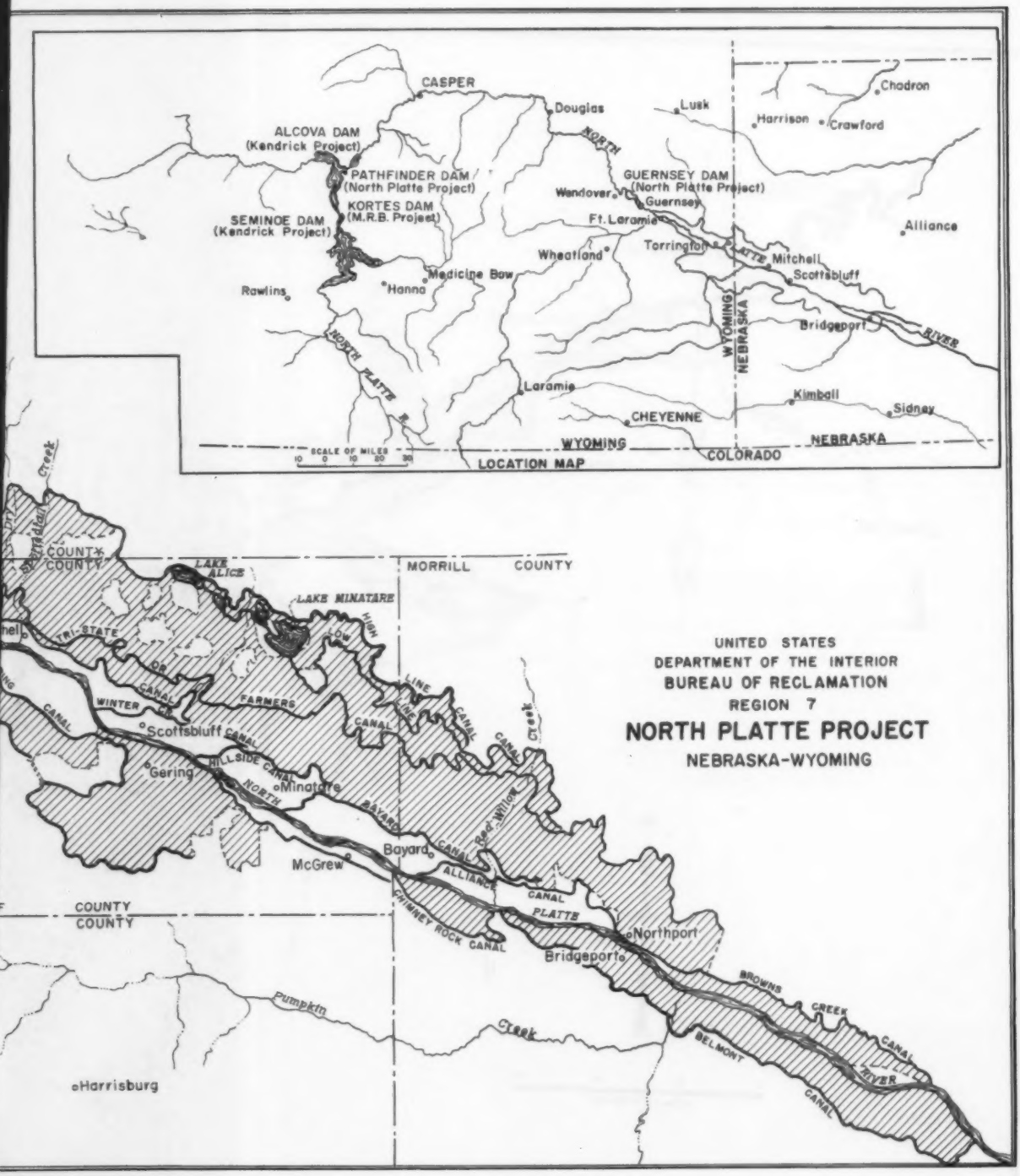
20



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ACCOMPLISHMENTS OF IRRIGATION, NORTH PLATTE PROJECT, WYOMING-NEBRASKA

HIGHLIGHTS AND SUMMARY

The North Platte irrigation project was authorized for construction in 1903—one of the first under the new Reclamation Act. This great project, 25 years a-building, provides irrigation service to more than 350,000 acres in eastern Wyoming and western Nebraska.

In this valley, agriculture is the only basic income-producing activity. Irrigation accounted for some $21 million worth of crops in a recent census year. Upon this solid foundation of irrigation farming rests an associated economy which in 1950 turned out a $91 million income for valley residents.

During periods of economic depression and crop failure, this irrigated area maintained an impressively stable production, providing residents with steady incomes and assimilating westward-moving persons from the drought stricken Middle West.

This productive irrigated area contrasts vividly with the adjacent wheat-and-cattle country:

Irrigated land outproduces dry-farmed land 13 times.

Ten percent of the 4-county area is irrigated but it produces 91 percent of the total income payments in the area.

The irrigated area and towns therein support 27 times as many people and provide 40 times the income as adjacent prairie areas of equivalent size.

Property tax revenues have grown twentyfold by introduction of irrigation.

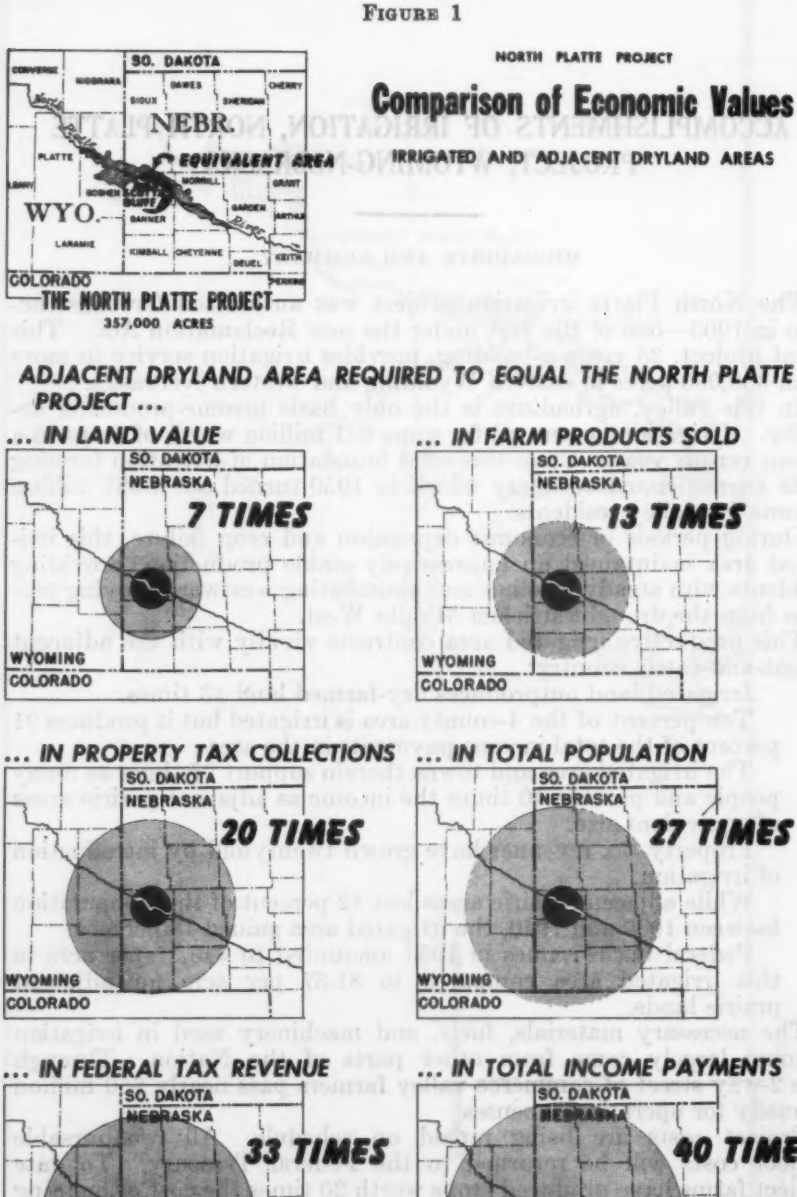
While adjacent prairie areas lost 12 percent of their population between 1930 and 1940, the irrigated area gained 18 percent.

Federal tax revenues in 1953 amounted to $45.37 per acre in this irrigated area compared to $1.37 per acre for adjacent prairie lands.

The necessary materials, fuels, and machinery used in irrigation farming largely come from other parts of the Nation. Through this 2-way street of commerce valley farmers pass nearly $50 million annually for operating expenses.

Project costs are being repaid on schedule. All reimbursable project costs will be returned to the Federal Treasury. To date project farms have produced crops worth 20 times the cost of building the project. About $16 million in Federal taxes arise out of the irrigated area and its towns each year.

FIGURE 1


NORTH PLATTE PROJECT
Comparison of Economic Values
IRRIGATED AND ADJACENT DRYLAND AREAS
SO. DAKOTA
NEBR.
WYO.
COLORADO
EQUIVALENT AREA
THE NORTH PLATTE PROJECT
357,000 ACRES
ADJACENT DRYLAND AREA REQUIRED TO EQUAL THE NORTH PLATTE PROJECT ...
... IN LAND VALUE
7 TIMES
... IN FARM PRODUCTS SOLD
13 TIMES
... IN PROPERTY TAX COLLECTIONS
20 TIMES
... IN TOTAL POPULATION
27 TIMES
... IN FEDERAL TAX REVENUE
33 TIMES
... IN TOTAL INCOME PAYMENTS
40 TIMES
NEBRASKA
WYOMING

A NEW ERA BEGUN

Conserving natural resources

As the modern traveler speeds westward through Nebraska, along the route of the old Oregon Trail, the sage and cactus-covered plains suddenly dip into a fresh green valley beside the North Platte River. In a magnificent setting beneath the shadow of a great pulpit-like escarpment known as Scotts Bluff nestles a living example of man's ability to rework nature's estate and create a productive resource. The fruitful farms and the bustling towns validate the pioneering scheme to concentrate the erratic runoff from 18 million acres of snowcapped mountains and arid range upon less than 2 percent of that area.

Here, where stable maturity in an irrigation economy has been reached, it seems appropriate to recount the accomplishments of nearly 50 years. The first settlers homesteaded here with a solid faith in the soundness of the idea of irrigation and with a willingness to contract to repay the Federal investment. "The justification of their faith is indisputably written in the abundant productivity of the farmlands, in the modern farm homes, and in the bustling economy of the prosperous valley towns," says Harry Bashore, former Commissioner of Reclamation and a lifetime resident of the valley.

Here follows the story of the birth, the growth, and the proving of an irrigation project.

Flood and drought subdued

By the turn of the present century, irrigation in the North Platte Valley had progressed as far as possible without development of water storage and regulation facilities. Water users had more water than they could handle during the spring, but by early summer only a trickle remained in the riverbed. Irrigation was consequently limited to such early-maturing crops as grain and hay. The fury of flood and the searing of drought alternated in destroying the pioneers' crops and farmlands.

It was recognized that a large reservoir upstream from the irrigators' lands would smooth out the variable flows of the river, make existing irrigation enterprises safe and more efficient, and permit the extension of irrigation benefits to large blocks of new land.

Surveys of upstream reservoir sites were made by the United States Geological Survey prior to 1900 and by the United States Reclamation Service after its establishment in 1902. These surveys supported the farmers' belief that feasible storage facilities could be built. The North Platte project was among the first five projects authorized under the Reclamation Act—all on March 14, 1903. Getting underway in 1905, construction on Pathfinder Dam—the initial feature of the North Platte project—progressed rapidly. First water was delivered to project lands in 1908 and construction of the dam was completed in 1909.

The early years saw a period of rapid development. By 1912 nearly 1,000 new irrigated farms had been established on the project. The valley was booming from the new construction and from the rapid expansion of farming and the accompanying building and improvement activity. Between 1912 and 1914 the population of the valley farms increased by 50 percent. In 1914 alone, the settlers

built 86 new houses; enlarged 31 more; and built barns, granaries, other farm buildings, schoolhouses, and churches. Gross farm income per acre in 1914 averaged $15. The next year, the per-acre gross crop income on project farms increased by 25 percent. Approximately 85,000 sheep and 3,000 cattle were imported for fattening during the winter on the crops produced on the newly irrigated farms.

Although construction of all the dams and canals consumed many more years, as each additional feature was built it was possible to supply more land on the project. Finally, with the construction of the last regulatory reservoir in 1928, the project was virtually completed.

Projects of such magnitude must of necessity be planned and started long before the ultimate need for added production arises. It took 25 years, beginning in the era of horse and slip scraper construction and ending in the age of electric dragline and bulldozer, to harness the river with stone and steel and concrete.

The North Platte project consists of Pathfinder Dam and Reservoir having a capacity of over a million acre-feet, 5 regulating reservoirs, and nearly 2,000 miles of canals, laterals, and drains. A full supply of water is provided to 4 irrigation districts for 226,324 acres of land. Ten water-user associations having an irrigated area of 108,715 acres bought surplus storage rights in the project. Other private ditch companies have, in time of drought, bought storage water from the project. In 1950 more than 357,000 acres of land utilized water from project storage. These lands extend 110 miles along the river valley from near Guernsey, Wyo., to east of Bridgeport, Nebr.

Electricity from two small hydro plants, situated so as to utilize the head created by irrigation features, is supplied to many towns, rural cooperatives, and industries in the project area. Electric draglines replaced the horses and scrapers in the later stages of construction of the canals. This electric power now provides much of the means and incentive for increased domestic and industrial electrification in the project area. Net revenues from the sale of this power have assisted considerably in the liquidation of the irrigators' construction obligation.

Other incidental benefits are creditable to the project. The project reservoirs have been effective in reducing damage to property and loss of life from floods. A direct result of flood control is the increased utilization of river valley lands made safe and productive by the regulation of river flows. Also, the reservoirs have become valuable recreation areas. In this arid region, they provide excellent fishing, boating, and swimming which would otherwise be mediocre or nonexistent. Wildlife refuges have been established at two reservoirs.

NEW WEALTH FROM WATER

Production is increased

Food production from the North Platte Valley plays an important role in keeping America's population one of the best fed on earth. Prior to being irrigated, this valley was cattle country typified by native ranges of buffalo grass, gramma grass, wheat grasses, and sagebrush. A little native hay was cut from the meadows and

bottomlands for winter feed. Severe winter storms caused heavy losses to the livestock. About 40 acres of range were required to sustain a cow and her calf. Some dryland farming was practiced but due to erratic rainfall was without marked success.

Irrigated land in the North Platte Valley produces 13 times more per acre in terms of farm products sold off the farm than adjacent dry-farm and grazing lands. In 1954, the gross value of crops grown totaled $27.9 million and the cumulative total value since 1908 is approximately $454 million.

From the first irrigation, the project produced alfalfa, corn, potatoes, and sugar beets steadily and abundantly. There has never been a total crop failure in the valley. Occasional climatic setbacks are experienced, but the diversified cropping system made possible by the adequate supply of irrigation water has precluded a complete crop loss. Moreover, the combination of dependable water supplies and fertile soils provides the possibility for adapting future farm production to a variety of crops. This diversity looms highly important as changing food consumption patterns appear in the economy.

At present, enough dry beans are produced here each year to meet the needs of 14 million persons—the combined population of New York City, Chicago, and Philadelphia. Sugar production in a normal year will supply 2,400,000 people; potato production, 4,500,000 people. A freight train 8,800 cars long would be required to haul the annual production of these 3 commodities. More than 150,000 head of cattle, 335,000 head of sheep, and 65,000 hogs are marketed through the livestock auction yards and packing houses in the valley.

Incomes are increased and stabilized

In this valley, agriculture is the only important basic income-producing activity. Practically all trade and commerce revolves around agriculture, rising as it rises, feeling the effect of unfavorable weather and price drops, and multiplying these good or bad effects throughout the chain of economic activity. Stability is important therefore because so many people are dependent upon a prosperous agricultural base.

In 1950, farmers of the 4-county area which contains this irrigation project sold $55 million worth of farm products including livestock, $44 million of this being attributable to irrigation. Farmers on the North Platte project figured heavily in this production, turning out nearly $19 million in irrigated crops. Other irrigated lands produced another $2 million. The irrigated lands accounted for 80 percent of all crop receipts.

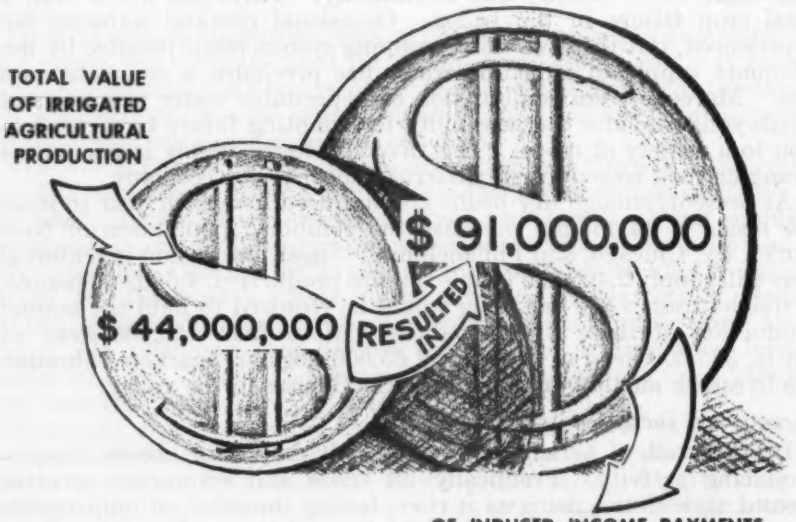
According to data developed from United States Department of Commerce income statistics, residents of the valley drew $100 million in income payments in 1950. Comparison with income data from nearby dry-farming communities reveals that $91 million of this $100 million resulted from activities which surround irrigation farming (fig. 2). Such a circumstance, wherein 91 percent of an area's income results from irrigation of but 10 percent of the land area, illustrates the efficiency of irrigation.

FIGURE 2

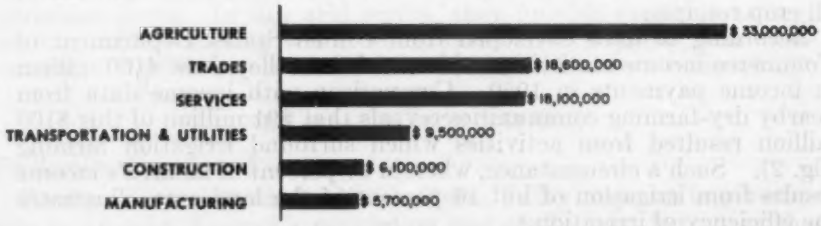
NORTH PLATTE PROJECT

INCOME PAYMENTS INDUCED BY IRRIGATED AGRICULTURE

1950


TOTAL VALUE OF IRRIGATED AGRICULTURAL PRODUCTION
$ 44,000,000
RESULTED IN
$ 91,000,000
OF INDUCED INCOME PAYMENTS, MAINLY WAGES AND PROFITS, IN THE LOCAL AREA

... DIVIDED AMONG THE FOLLOWING INDUSTRIES



The characteristically stable level of production and economic conditions in this irrigated area is illustrated in the record of assistance required by Nebraska farmers here and elsewhere in the State during the terrible drought years. In 1936, the State dropped from 3d to 18th place in the production of corn, from 2d to 5th place in wheat, from 2d to 7th place in alfalfa, and similarly in the production of other commodities. By January 1937, 1 of every 6 Nebraska farm families received Federal grants for relief under the rural rehabilitation program. In contrast with this record of poverty and distress throughout the State, only 1 in 25 farm families received aid from this program in Scotts Bluff County. In this county, irrigation reduced the relief bill by more than three-fourths.

On an acre basis, income payments to individuals stemming from irrigated land are 40 times greater than from adjacent dry land. Translated into terms of livelihood, 40 times as many people could live in an irrigated area as could live in a dryland area of equivalent size. The primary reason for this pronounced difference is the intensity of cultivation of the respective types of farming. Requirements for machinery, fuel, seed, and labor call for a virtual army of suppliers, mechanics, and technicians to keep the irrigation farmer going. In contrast, dryland farming and ranching require a relatively negligible expense per acre and afford few opportunities for merchants and tradesmen because products are not processed or stored locally, hence these services are performed and paid for elsewhere.

Community services are improved

Increased farm prosperity and trade activities are not the only benefits of irrigation. Adequate income is provided by the production from irrigated lands and from commerce in the towns to maintain good schools, roads, medical services, and the churches and civic improvements that make the North Platte Valley an ideal community in which to live.

Property-tax revenues for Scotts Bluff County and Banner County bordering on the south, point out the value of irrigation development to county tax collections. In Scotts Bluff County 90 percent of all farms are irrigated; in Banner County, only 6 percent are irrigated. These counties are about the same size and in each county, agriculture is the chief industry. Irrigation's effect upon property values is reflected in the fact that Scotts Bluff County collected $3,547,000 in property taxes in 1953 as compared with $190,000 in Banner County. Community services obviously can be provided more effectively to the public where the tax revenues are increased nearly 20 times by virtue of irrigation.

Transportation, commerce, and industry prosper

Irrigation, commerce, and industry progressed together in the valley. As irrigation was developed, parallel growth of lumber yards, implement companies, crop storage and processing establishments, grocery stores, and service trades took place.

The Burlington Railroad pushed through in 1900 and linked the area with the eastern markets. Scottsbluff was established in that year at the railroad terminus with a population of 450 people. Construction of project features, starting in 1905, attracted craftsmen from all over the country. As irrigation service became available,

irrigated homesteads were taken up by the hardy settlers who poured into the valley in search of homes and land. In 1910 the first beet-sugar factory was built in Scottsbluff. That first year the factory processed beets from 3,500 acres. Since that time over 6 billion pounds of sugar have been produced. In 1912 the Union Pacific Railroad extended the second rail line into the valley. By 1914 there were 14 banks; by 1920, there were 3 more. The year 1923 saw the start of the dry-bean industry—now an $11,500,000 annual business in valley plants.

With each increase in business activity, wholesalers, manufacturers, and new tradesmen came into the valley. Every year saw new growth as the transformation of the prairie progressed.

The extent of the commerce stimulated by irrigation is illustrated by data from the latest census of business. Scotts Bluff County, representing about half the valley's business volume, reported retail sales of $41,905,000, wholesale trade of $45,327,000, service business of $2,025,000, and manufacturing that added $9,318,000 to the value of the raw materials.

Today's growth of commerce and industry is tightly knit with agriculture. Fertilizer plants, alfalfa processing mills, and custom farm services are a part of the parade of technological advances taking place in agriculture. Irrigation farming is dynamic—it will continue to inspire new growth and new opportunities wherever it is practiced.

Claude Wright, banker and livestock man of Mitchell, Nebr., first came to the valley in 1909 and aptly describes the growth of business:

> Prior to irrigation, farm income came from range livestock. Irrigation brought intensive agriculture. This in turn called for a large amount of labor. Eight families built irrigated farms where before only one dryland farm or ranch family had lived. As population grew from the original 3 persons per square mile to about 20 or 24 persons, business on our main streets increased every year. As the years passed, farmers mechanized and thus created a new market for farm equipment.

Highly developed transportation facilities serve the communities of the valley—2 railroads, 2 major airlines, and numerous trucking companies. The rural areas are well served by rural electric and telephone services. Natural-gas pipelines bring gas to the towns and to many of the farms.

A meatpacking industry has developed from the growth of livestock feeding on irrigated valley farms. In a normal year more than half a million head of livestock are marketed off these farms, much of this production being processed in local plants. With the westward movement of the Nation's population, increasing proportions of the livestock production are going to western packing plants. Local meatpacking plants employ 200 persons and have a payroll of over $800,000. The need for specialized farm equipment, created by intensive cropping and by labor shortages, has given rise to new local industries such as the Julius Siske & Co. steel works and foundry. Mr. Siske, himself an early farm settler in the valley, recognized the farmer's acute need for special sugar-beet machinery. Exercising his natural bent for mechanics, he devised special types of mechanical harvesting equipment which were largely responsible for converting the beet-growing business from the age of "stoop" labor to modern cultural and harvesting methods. His company now manufactures

sugar-beet harvesting equipment and other specialized equipment used in the valley. Some of his products have had nationwide distribution.

T. J. Lockwood, manufacturer of potato grading and handling equipment, has built a business grossing a half million dollars annually. Today his equipment is used all over the United States as well as in Europe and Australia. The late Chester B. Brown, founder of the bean-buying company bearing his name, is given credit for bringing the bean industry to western Nebraska. This company now has eight modern and efficient bean-processing plants that handle a major portion of the bean crop harvested in the North Platte Valley. John R. Jirdon heads processing, storing, and service enterprises that grew out of his foresight and confidence in the future of irrigation farming. Farmers and businessmen alike have enjoyed the progressive advance of the valley's prosperity. No slackening of the pace is evident.

Population increases are permanent

Each thousand acres of the irrigated portion of the North Platte Valley supports 134 persons on farms and in the towns. In contrast, only five persons reside in the adjacent dryland area per thousand acres in dryland uses. Agriculture, as the basic industry, creates investment and employment opportunities in proportion to its productivity. For every irrigated farm in the valley, four families living in the local towns and villages perform personal services, manufacturing, transportation, and trade activities.

Stability of population is an important characteristic of irrigated communities. During the unstable decade from 1930 to 1940 most Midwestern States lost population. During this period, the natural population increase in the United States was about 10 percent but Nebraska was losing 4.5 percent of its population. Dryland counties adjacent to Scotts Bluff County lost 12 percent of their population. Scotts Bluff County experienced a population gain of 18.4 percent (fig. 3). In that decade, Scotts Bluff County provided 5,273 persons a home and livelihood when they were forced by economic circumstances to leave other locations.

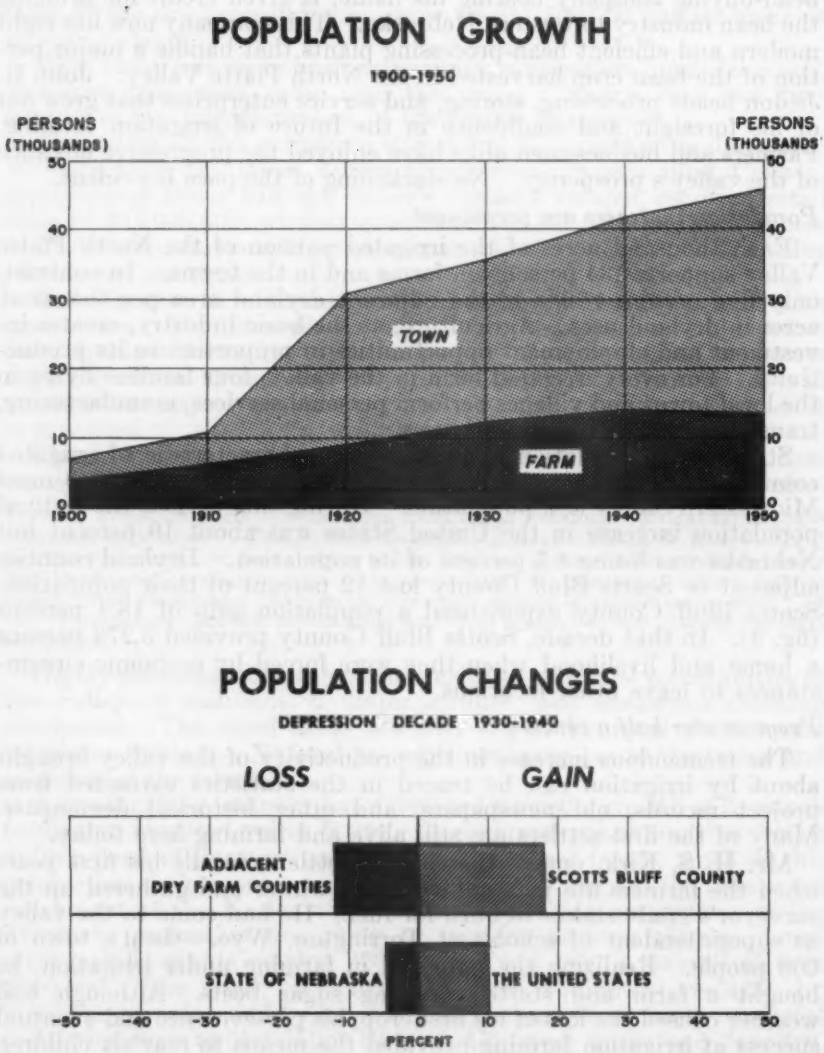
Progress over half a century

The tremendous increase in the productivity of the valley brought about by irrigation can be traced in the statistics extracted from project records, old newspapers, and other historical documents. Many of the first settlers are still alive and farming here today.

Mr. H. S. Kirk, one of the earliest settlers, recalls his first years when the farmers ate jackrabbits in the winter and gathered up the surveyor's grade stakes to burn for fuel. He had come to the valley as superintendent of schools at Torrington, Wyo.—then a town of 600 people. Realizing the potential in farming under irrigation, he bought a farm and started growing sugar beets. Although bad weather caused the loss of his first crop, his perseverence and eventual success at irrigation farming provided the means to rear six children and give them college educations. One of Mr. Kirk's sons farms the home place now. Pioneer Kirk's experience is typical of thousands of new settlers whose opportunities to create new wealth of their own were occasioned by the Reclamation Act of 1902.

FIGURE 3

NORTH PLATTE PROJECT



The growth of opportunities and wealth created in the North Platte Valley by the reclamation of arid lands is charted in statistics which span the 50 years from its inception to the present day (table 1).

TABLE 1.—*50 years of agricultural and economic progress, North Platte project area*

	1900	1910	1920	1930	1940	1950
Area irrigated (acres)	85,000	138,000	196,542	302,680	314,134	357,130
Number of irrigated farms	1,165	1,800	2,660	3,961	3,930	4,212
Annual value of crops	$582,500	$900,000	$4,426,154	$10,967,096	$7,622,000	$18,881,577
Value of lands	$1,275,000	$2,542,000	$9,100,000	$18,196,000	$37,670,000	$62,500,000
Bank deposits	$100,000	$500,000	$3,000,000	$6,180,000	$7,592,000	$46,830,000
Farm population	4,075	6,300	9,069	13,257	14,031	13,693
Town population	3,000	4,600	21,700	22,210	27,526	32,184
Total population	7,075	10,900	30,769	35,467	41,557	45,877

Virtually all land that could be feasibly served from private irrigation canals was in production by 1908. Further irrigation development was dependent on the storage and regulation of surplus water. The North Platte project provided this needed regulation for the erratic runoff of the river and permitted the development of lands which are of limited value without irrigation. In the half century that followed, the value of crops produced increased thirtyfold. The stable and comparatively lush farming prospects brought 3,000 new farm families from other parts of the country. Towns grew in response to the settlers' needs for markets, goods, and services until the urban population had increased 10 times. Bank deposits rose 4,600 percent. Behind it all, as evidence of real and permanent wealth, lay the land itself. This land, once raw and barren prairie, grew in value to $62,500,000 (fig. 4). This was new wealth from water.

THE NATION'S BUSINESS PROSPERS

Rail freight shipments an indicator

A measure of the scope of the nationwide business carried on between the North Platte Valley and other localities can be illustrated by rail shipments into and out of the area although but about 25 percent of the total freight is shipped by rail. Since the first railroad reached the valley in 1900, it is estimated 513,200 carloads have been shipped out while another 532,100 carloads have been received.

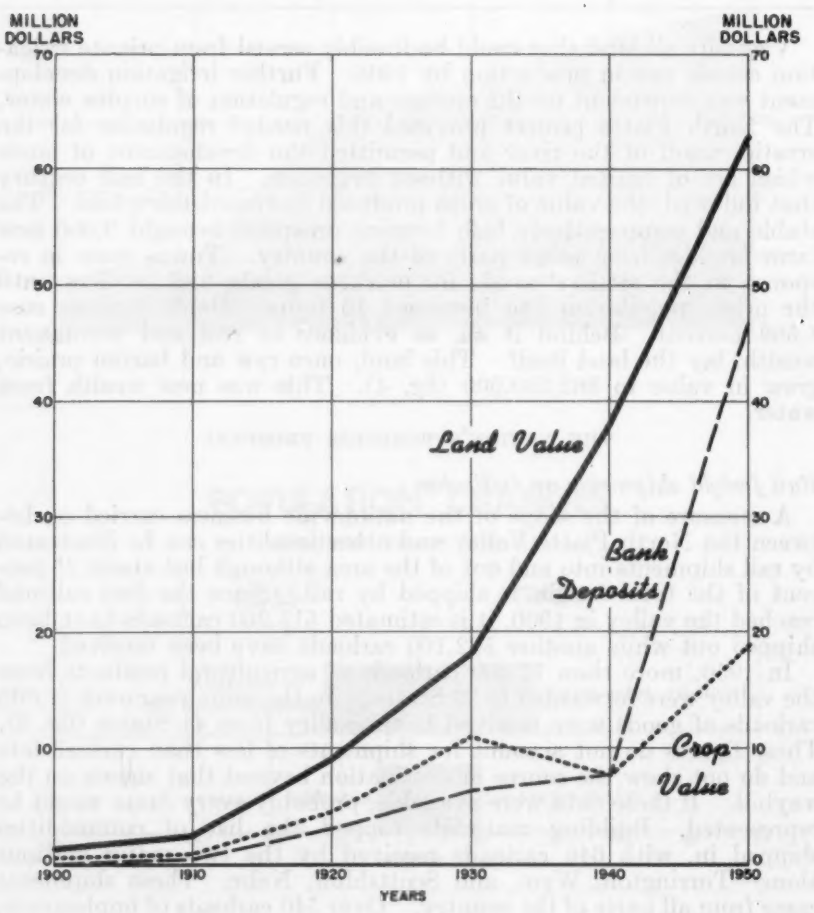
In 1950, more than 13,000 carloads of agricultural products from the valley were forwarded to 32 States. In the same year over 17,000 carloads of goods were received in the valley from 44 States (fig. 5). These figures do not account for shipments of less than carload lots and do not show the source or destination beyond that shown on the waybill. If these data were available, probably every State would be represented. Building materials topped the list of commodities shipped in, with 646 carloads received by the two major stations alone—Torrington, Wyo., and Scottsbluff, Nebr. These shipments came from all parts of the country. Over 540 carloads of implements, machinery, automobiles, and tractors were shipped into Scottsbluff and Torrington. These shipments came principally from the northeastern section of the country. There were 220 carloads of livestock received by these same two stations.

FIGURE 4

NORTH PLATTE PROJECT

INDICATORS OF ECONOMIC GROWTH

DURING 50 YEARS OF IRRIGATION



Eastern farmers living near the factories which produce this vast flow of industrial commodities consumed in the North Platte Valley also prosper from this increased trade since their own local market for their farm products is dependent upon the employment of the factory workers who produce goods for the far-distant consumer. The dairy farmer near Detroit may be the best example of this dependence since his milk market is tied so closely with high-level industrial employment.

One industry as an example

It has long been national policy to maintain a strong nucleus of domestic beet sugar production. As a result of the advantages which irrigation provides to sugar beet growing, the bulk of this domestic beet sugar industry has gravitated to the irrigated sections of the West. Irrigation has thereby become, by the process of economic competition, the means by which our stable sugar production is maintained.

It is often said that the beet sugar industry is the backbone of the economy of the North Platte Valley. From the farmer's standpoint sugar beets contribute more to a well-rounded agriculture than does almost any other crop. It is a dependable crop; it produces a high monetary return; it is responsive to inputs of additional labor, plant food, and irrigation water. The gross return from an acre of sugar beets is high and therefore furnishes adequate income to maintain intensive farming practices. It supplies a large amount of nutritious byproducts for livestock feed. These byproducts are complementary to the other livestock feeds produced on irrigated farms. Manure from the feeding operations has high value for fertilizer.

Each year the sugar industry puts over $3 million into local circulation for payrolls, supplies, and other items. In a normal year, the farmers are paid more than $6 million for their sugar beets. Materials and supplies are assembled from many States for use in the manufacturing process—lime rock from Colorado; sulfur, coal, and natural gas from Wyoming; coke from Alabama; steel from Colorado and Illinois; insecticides from Colorado and Utah; beet seed from Arizona; bags from the Pacific coast; and fertilizers from Montana, Utah, and Texas.

Five factories are required to process the beets grown in the valley. These factories furnish part-time work to nearly 1,000 dryland and irrigation farmers in the fall and winter months. Many other regular employees work throughout the year. Thousands of migratory workers find seasonal work in the beet fields before moving on to fruit and grain harvests.

Sugar beet byproducts were instrumental in building the livestock-feeding industry. In the early years of the project, the limited number of livestock in the valley could not utilize all of the beet tops, pulp, and molasses produced. The farmers were thus encouraged to ship in additional livestock to utilize the beet byproducts. Livestock feeding has now progressed to the point where corn must be brought into the valley from the Corn Belt area to supplement locally produced feeds.

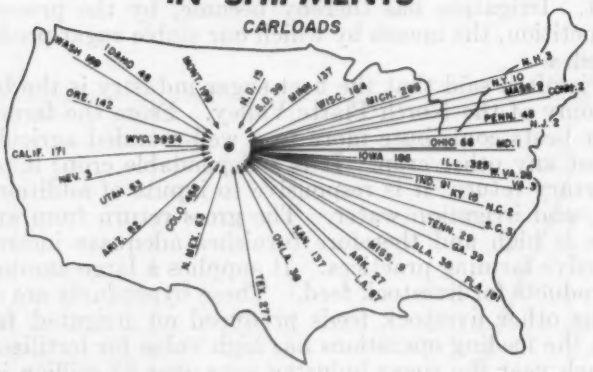
FIGURE 5

NORTH PLATTE PROJECT

RAIL FREIGHT SHIPMENTS 1950

IN-SHIPMENTS

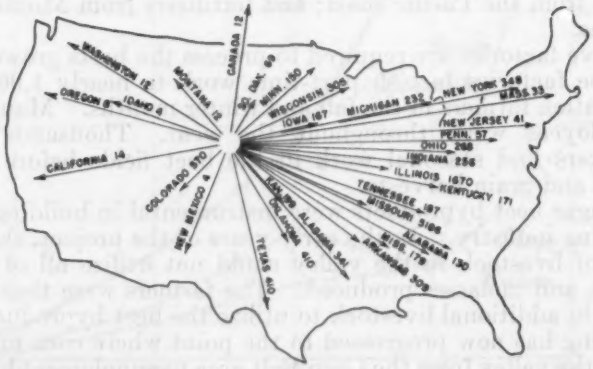
CARLOADS



More than 17,000 carloads were shipped into the Project Area from 44 states.

OUT-SHIPMENTS

CARLOADS



More than 13,000 carloads were shipped out of the Project Area to 32 states.

A BRIGHT FUTURE IS AHEAD

Project costs will be repaid

The total Federal cost of bringing dependable irrigation to the valley was $22,482,000. As of June 30, 1955, $16,182,000 of this cost has been repaid to the Federal Treasury although the last major feature was not completed until 1928.

In addition to these repayment revenues, the Federal Treasury is receiving $16 million annually in Federal excise and income taxes from this irrigated area. This is $11 million more than would be possible today without this irrigation project. Each year, therefore, the Federal Treasury receives net tax payments arising out of this development amounting to half the construction cost. These payments into the Treasury are constant by reason of the permanent productivity of the irrigated farms.

Federal tax collections in 1953 from all sources in the valley, including income taxes, amounted to $45.37 per acre of irrigated land as compared to only $1.37 per acre for nonirrigated land. In the Platte Valley and in other areas analyzed, Federal taxes were collected almost dollar for dollar with the value of crops grown on the land. On the other hand, Federal taxes on dryland areas were collected in the proportion of about one-fifth of the value of gross crop production.

Business will continue to prosper

Nonagricultural income payments are inexorably tied to basic farm production. Strong and confident urban communities exist in the presence of a stable agricultural base. Over a long period of record, Scotts Bluff County has consistently had the highest productivity rating in the State.

The effects of the valley's stability are clearly evident. As farm production holds firm here, foreclosures on farms, homes, and businesses and unemployment are held to a minimum while purchasing power and business volume are relatively greater than elsewhere in the State. Strength at the local level in the business cycle is reflected and multiplied throughout the nationwide routes of commerce through which flow the autos, trucks, tractors, fertilizers, machinery, chemicals, clothing, fuel, furniture, building materials, and food which the farmer requires.

These farmers replace about 10 percent of their $40 million equipment inventory each year. $4 million courses through the channels of trade to purchase these tractors, automobiles, trucks, farm machinery, equipment, and supplies. In addition, more than a million dollars is normally spent for the maintenance of buildings and fences on the farms. Paint, lumber, nails, wire, and tools are needed from all parts of the country. Expenditures for seed, fertilizers, petroleum products, machine hire, labor, feed, and livestock purchases aggregate about $39 million. These necessary farm expenses of approximately $50 million annually are the foundation upon which some 1,800 businessmen and merchants have built their own trades and service establishments.

Thus the economic return to many persons from agriculture comes not from the value of the commodities produced but from the various goods and services that the farmers and farm workers require.

The investment is permanently productive

To date the project farms have produced crops worth 20 times the original project cost. The ability of the project farms to produce wealth in the future as they have for over 50 years is unquestioned. Progress in the science of farming, together with the pride of superior accomplishment these farmers possess, will set new records of production as the next half century enfolds. In contrast to extractive industries, the lives of which grow progressively shorter as each productive day passes, water conservation projects such as these can be credited with the conversion of otherwise wasted resources into new wealth and opportunity.

Society places a high psychological value on an expanding economy and the development of a region. Throughout American history, the opening of new lands to settlement, the building of railroads, and the developing of greater markets can best be described as "progress."

This great project, lasting and self-sustaining, will continue to play its part in meeting the needs of the Nation by providing jobs, adequate living standards and economic opportunities.

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